started at: 2:59 AM, *finished* 3:16 AM on 96.06.26

Catchbag for New Thoughts

This is not about implementation. I am intending to state the EXACT STRUCTURE, not create spurious specificities where they should not be.

What does this have to do with HTML? Nothing whatsoever. HTML is an extremely crude-but-effective system that postpones all the problems we have endeavored to conquer. Experience with HTML and the Web are preparing people to understand what the real problems are that this has been designed to deal with.

Arrangement of ownership is SHARPLY-DEFINED AND IMPLEMENTABLE, does not have certain Justice Features.

System of ownership does not embody every possible Justice Feature. I challenge anyone to do better.

Transclusion does not manage all the justice points.

Justice points evolve around existing systems. New systems have new justice points.

An opposite approach from that of such increasingly bizarre, baroque submarine-sandwich formats as PostScript and PDF, QuickTime and MPEG, and a return to the Unix philosophy of open visibility and open programmability.

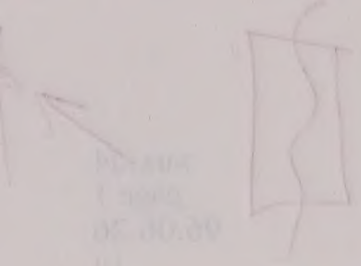
How to show this in today's browsers is akin to the problem of how to look at faraway galaxies with a dime-store telescope, or how to show 70mm movies with a kerosene-powered 1890s magic lantern.

(Which put a strange linear structure onto hypertext. I regret inventing that.)

Last night's and today's inspired writeup; followed by Monday morning's half-asleep version.

Proposed Open Standard for Xanastructure and Xanamedia [Notebook 96.06.24, p. OSX 1.]

These could be in any order. This is the probable order of implementation or interest.



This is a unified and simplifying set of conventions.

What has been called "bragging" essentially was our specifications.

Complimentary or neutral references (as in the O'Reilly *Mosaic Handbook*) often do not show understanding of what we were trying to do.

"Blendo."

Barlow's dramatic cry: We will bury you...

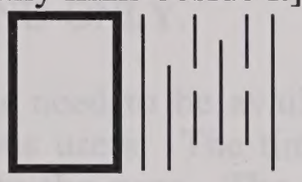
○C O N N E C T I O N STANDARD

Composed of

links (posted and maintained)

transclusions (somehow on the data structure)

[pic] box with many links beside it]



for pluralistic dense linking

applicative

TRANSACLUSION DEFINED

ENACTMENT/SIMULATION of a system of universal masters of content

Transclusion IMPLEMENTED

How done at the database level is another question.

②*CHANGE STANDARD*

for
LINEAR CHANGES
and
FORKING CHANGES IN HYPERTIME

Multiplied by / WHILE STILL MAINTAINING CONNECTIONS (links & transclusions).

HISTLIST holds the changes.

It must be APPEND-ONLY.

Previous versions need to be available to honor (ie, be able to follow) the links of previous users. The time-granularity of the version management should be up to the user. The extra storage needed for our change-by-change HistList is far less than the extra storage needed by 32 versions [law firm citation].

[Notebook 96.06.24, p. OSX 21.]

○*O W N E R S H I P STANDARD*

T. Owned CONTENTS
-- commodity term for text, pictures etc.
May be included in documents.

Andrew: Data is Versions & History, Metadata is titleplex

Owned Document:
Titleplex (metadata)
Collection of versions
History
Elements
LINKS

Version defined:
Collection, sequence or structure of materials [see later]
(Form of sale discussed later)

Andrew. "Your document may contain *content* owned by somebody else."

④ *RE-USE STANDARD*

Transclusion manages a large number of these.
Re-use is identifiable from document to document, version to version

PRIVATE
PUBLISHED
PRIVASHED
PRIVATE
Royalty
PRE-PERMISSION
PUBLICATION
FORM OF SALE
RE-USE ACROSS DOCUMENT BOUNDARIES
MAINTENANCE OF OWNERSHIP FOR PUBLICATION

[Notebook 96.06.24, p. OSX 1 again.]

⑤ *MICROPAYMENT AND MICRODELIVERY STANDARD*

(Not possible yet)

⑥ *STRUCTURE MAPS*

(No standard proposed presently)

[Notebook 96.06.24, p. OSX Users]

⑤MICROPAYMENT AND MICRODELIVERY STANDARD

(Not possible yet)

⑥STRUCTURE MAPS

(No standard proposed presently)

[Notebook 96.06.24, p. OSX 3.]

More prelim. remarks.

Few have bothered to understand this simultaneous set of XXXXX. [recalls? reqts?]

They thought we were "bragging" about technology whereas we were proposing an exact set of conventions which are technologically implementable in a clean and simple fashion.

These standards are separable and seem to form a hierarchy

This IMPOSES NO ADDRESSING STRUCTURE
Does not deal with aliases,
which can create large-scale difficulty

[Notebook 96.06.24, p. OSX 4.]

More prelim. remarks.

These allow:
re-use of all materials (provided permission is given)
automatic fine-grain payment
(according to a scheme which may be arguable but is implementable)
VERSION CONTROL AND UPDATE
CONTINUAL CHANGE OF ALL MATERIALS SIMULTANEOUSLY WHILE MAINTAINING ALL CONNECTIONS
The equivalent of "file synchronization"
CLEAN MULTIPLE RE-USE AND TRACING OF WORKGROUP AND ENTERPRISE DOCUMENTS AND CONTRIBUTIONS
WIN-WIN ADDITIONS TO THE COPYRIGHT SYSTEM, LEGAL EVERYWHERE,
TO SIMULTANEOUSLY FACILITATE ROYALTY COLLECTION AND UNFETTERED REPUBLICATION

xxx.dd
page 8
96.06.24
"

[Notebook 96.06.24, p. OSX E]

More prelim remarks:

Few have bothered to understand this simultaneous set of XCOXOX [metallic? reds?]

They thought we were "bragging" about technology whereas we were proposing an exact set of conventions which are technologically implementable in a clean and simple fashion

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[Notebook 96.06.24, p. OSX E]

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[Notebook 96.06.24, p. OSX 5.]

Our unified solution addresses a problem complex to which others propose partial solutions, either because their idea of the problem scope is less, or because their idea of the solution takes in less.

Complete interoperability of materials and dataplexes

This is not within object-oriented theology. This is unabashedly *datacentric*.

[Notebook 96.06.24, p. OSX 6.]

This is a proposed set of standard methods.

①*CONNECTION STANDARD*

link types
transclusion finding

②*CHANGE STANDARD*

DEFINE SPECIFIC STRUCTURAL OPERATIONS
- Insert
- Delete
- Rearrange

(Addressing hack: deletion as rearrangement below zero)
SPECIFICS OF ADDRESSING IN HYPERTIME CAN BE DEFINED

③*OWNERSHIP STANDARD*

OWNERSHIP IS SIMPLY A SET OF CATEGORIES.

④*RE-USE STANDARD*

RE-USE is a set of categories and definitions.

Except PAYMENT AND DELIVERY.

⑤*MICROPAYMENT AND*

MICRODELIVERY STANDARD

⑥ *STRUCTURE MAPS*
[UNDEFINED]

[Notebook 96.06.24, p. OSX 7.]

This was intended for
CROSS-CONNECTED OVERVIEWS OF ANYTHING

IMPOSSIBLE TO SEPARATE AXIOMS:
CONVENTIONS
from UNDERSTANDINGS
from PARADIGMS
from RULES

[Notebook 96.06.24, p. OSX 8.]

① *CONNECTION STANDARD*

CONNECTIONS

TRANSCLUSION IMPLICIT (needs no implementation) **[WRONG]**

LINKS
[Proposed List -- PIC]

(TO IMPLEMENT)
I

LINK, Transclusion REC [??? REL? record?] & FOLLOW I

BIG OPTIONS

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96.06.24
**

[Notebook 96.06.24, p. OSX]

This was intended for
-CROSS-CONNECTED OVERVIEWS OF ANYTHING

IMPOSSIBLE TO SEPARATE AXIOMS:
CONVENTIONS
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from RULES

[Notebook 96.06.24, p. OSX]

① CONNECTION STANDARD

CONNECTIONS

TRANSCLUSION IMPLICIT (needs no implementation) [WRONG]

LINKS
[Proposed Link -- PIC]

LINK, Transclusion REC [??? REL? record] & FOLLOW

BIG OPTIONS

② *CHANGE STANDARD*

CHANGE STANDARD:

APPEND-ONLY CHANGE LIST

STANDARD CHANGE FILE

2D MOTION IN HYPERTIME

③ *OWNERSHIP STANDARD*

PUBLICATION IS IMPLICITLY OWNERSHIP DECLARATION of
MATERIAL
DOCUMENT
VERSION

[Notebook 96.06.24, p. OSX 91.]

③ *OWNERSHIP STANDARD, more*

Our hierarchy of Ownership:
DOCUMENT
VERSION
(CONTENTS NOT HIERARICAL since contents may be hypershared many places)

[BIG PIC:]
'System of UNIVERSAL MASTERS' UVOs -- Universal Virtual Originals

STABILIZED, OWNED MATERIAL ... internal addresses
(in objects or input streams) [see next page]

[PIC:]
CONVENTIONAL MODEL: File, Document, Object

STABILIZED, OWNER MATERIAL
(in objects or input streams)
internal addresses

CONTENTS, stored anew usually
(NAMEPLEX): PATH/(tilde OWNER)/PATH/FILENAME
CONTENTS (stored anew usually)
STRUCTURE
Successive removes & complexities
Each New Object: NEW NAME, NEW CONTENTS
STRUC USUALLY NOT APPLICATIVE

[cont. on Notebook 96.06.24, p. OSX 10]

(Primary sources without names undefined, but could be:
"Cutup"
"Input streams"
"Journals"

CAN BE CONVENTIONAL FILES.

[Notebook 96.06.24, p. OSX 10.]

③ *OWNERSHIP STANDARD, more*

These things can be owned:

As frozen into UVOs (Universal Virtual Originals)
MATERIAL = CONTENTS = SOURCE ELEMENTS = PRIMARY MEDIA = STUFF = SOURCE CONTENTS = CONTENT ELEMENTS

STRUCTURES ARE APPLICATIVE
(as are links)

[Notebook 96.06.24, p. OSX 11.]

[BIG PIC:] 'HIERARCHY OF OWNERSHIP' -- replacing the one on page 9 -- -- DOCUMENT (Nameplex, Change History, Versions)

VERSION

Arb. collection of contents
WIDELY SEPARATE or CONSECUTIVE CHANGES (in fine-grain mode)
Bottom of Pic:
SOURCE CONTENTS in whatever STABLE FORM, FROZEN INTO UVOs.
Given status as UNIVERAL MASTERS, UNIVERSAL ORIGINALS with higher address alllowing multiple copies.

[Notebook 96.06.24, p. OSX 12.]

Could call this a
- XANADOC
- XANDOC
- XANOB
- XANASTRUCT
- XANSTRUC

(Xanastruct/xanastruc could be:
- VERSION
- LINK
- XANADOC
- TRANSCLUSION?)

XANOBS?
- VIRTDOC, VIRTOB Object which is ALL VIRTUAL
- ALL-PRIMARY-CONTENTS OBJECT, PRIMOB -- [Obj of only new contents.]
- HYBRID OBJ Some old, some new

XANASTRUCTS
- Versions
- Links
- Xanadocs

Change History List, HistList
Change History Item
CONTENT POINTER in VIRTDOC LIST or LINKSET LIST

[Notebook 96.06.24, p. OSX 13.]

UVO or VUO
Universal Virtual Originals.
Virtual Universal Original.

(/* MJ & Andrew don't like it, prefer 'master copy.')

But "MASTER COPY" is an OXYMORON!

[Notebook 96.06.24, p. OSX 14.]

[BIG PIC:] 'HIERARCHY OF APPLICATIVE STRUCTURES'

[Notebook 96.06.24, p. OSX 15.]

[BIG PIC:] 'HIERARCHY OF APPLICATIVE STRUCTURES' -- to meld with the one on page 14 --

LINKS
point down to/receive contents from
Versions, Xanadocs, Struc Maps (Slogan: TO ANY IS TO ALL.)

point down to/receive contents from

CONTENTS FROZEN AS UNIVERSAL MASTERS (Slogan: TO ANY IS TO ALL.)

[Notebook 96.06.24, p. OSX]

[BIG PIC:]
'HIERARCHY OF APPLICATIVE STRUCTURES'

[Notebook 96.06.24, p. OSX]

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'HIERARCHY OF APPLICATIVE STRUCTURES'

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CONTENTS FROZEN AS UNIVERSAL MASTERS (Slogan: TO ANY IS TO ALL)

[Notebook 96.06.24, p. OSX 16.]

No constraints on addressing
(RECOMMEND tumblers as generalization of addresss space;
but tumbler arithmetic requires / "prefers" (DOESN'T IT?)--
numerical addressing

* TRANSCLUSION, definition:

IDENTIFIABLE RE-USE
from a
UNIVERSAL ORIGINAL
or
MASTER COPY
simulated or enacted by whatever means

[PIC:](several diagrams of different ways to enact transclusion0

[Notebook 96.06.24, p. OSX 17.]

No constraints on addressing
TRANSMISSIBLE:
Content elements (WITH IDENTITY SOMEHOW)

Versions
- PRIMARY CONTENTS
- MIXED PRIMARY / TRANSCLUSION-VIRTUAL
- ALL TRANSCLUSIVE / VIRTUAL

(Files)

XANADOCS
- Contents (somehow cosmic address)
- Histlist
- Links

xuxa.nl
page 20
96.06.26

[Notebook 96.06.24, p. OSX]

No constraints on addressing
(RECOMMEND numbers as generalization of address space;
but number arithmetic requires \ "prefers" (DOESN'T ITT).
numerical addressing

* TRANSCLUSION, definition:

IDENTIFIABLE RE-USE
from a
UNIVERSAL ORIGINAL
or
MASTER COPY
simulated or enacted by whatever means

[PIC:](several diagrams of different ways to enact transclusion)

[Notebook 96.06.24, p. OSX]

No constraints on addressing
TRANSMISSIBLE:
Content elements (WITH IDENTITY SOMEHOW)

Versions
PRIMARY CONTENTS
MIXED PRIMARY \ TRANSCLUSION-VIRTUAL
ALL TRANSCLUSIVE \ VIRTUAL

(Files)

XANADOCS
Contents (somehow cosmic address)
Histlist
Links

STRUCMAPS
NAMEPLEXES
CONTENT POINTERS

NO TRANSMISSIBLE NOTATION OF TRANSCLUSION YET DEFINED

TRANSMISSIBLE versus DISCOVERABLE
(OR otherwise representable) forms of transclusion

As yet, no specification of such representations

[Notebook 96.06.24, p. OSX 17.]

Version:
COLLECTION,
SEQUENCE
or
STRUCTURE
of materials
identified as
STATE:
STAGE of document
or
ALTERNATIVE of document

---------- *[Monday morning's version:]*

Xanadu Structure, and Why

The Xanadu system has been an evolving design over thirty-six years, but always with a number of simultaneous goals. It has been extremely hard to make these ideas understood, partly because most of these goals were incomprehensible to most people for most of this time, partly because people want to think they have understood a thing when they get one part of an idea, and partly out of malicious mishearing.

INTENDED CLEAN BALANCE OF MANY STRUCTURES

1. A work system for evolving materials, especially text, but in principle all other media contents as well. This system, keeping track of changes over time, is intended to let the user go forward and back and intercompare alternatives.

2. Comparison of alternatives and variants.

3. Hypertext.

4. Revision by all parties.

5. Distributed clarification of the materials (one type of which is now called "file synchronization."

SEVERAL CLUSTERS--
Intercomparison and presentation side-by-side
    Alternative versions side by side

Hypertext

Editing and changing

RE-USE OF MATERIALS
    transclusion, hyper-sharing, hot quotes, transquotation
        (a simple concept but hard to explain)

OWNERSHIP MANAGEMENT
- Who owns the content materials
- Who owns "the document"
- Payment to publishers

UNFETTERED RE-USE

- - - - - - -

XANADU DESIGNS
They all had these many things in common

Let us consider a simplified version of the 88.1 system.

We can explain it in four parts.

For the purpose of explanation, we can divide it into four parts; but these four parts do not correspond to any particular functions of the system.

PARALLELISM OF LINKS
- Assumption that a link is a literary structure
- Assumption that all parties may make links OF EQUAL CALIBER
- Author's links have primacy of a certain kind, but not of implementation

UNRESTRICTED RE-USE OF MATERIALS
- Blendo
- Barlow thesis
- A BALANCE WITH COPYRIGHT AND RE-USE

FOUR PARTS TO THIS MODEL

(INTERCOMPARISON & SIDE-BY-SIDE CONNECTED VIEWING)

PARALLELISM AND SEPARATION (split-HTML)
- Linear addressing within an object
- SEPARATION OF MARKUP AND LINKS

LINKS AND TRANSCLUSION
- through address comparison
- TCL as SIMULATION OF UNIVERSAL MASTER
  - for re-use
  - for royalty

EVOLUTIONARY SYSTEM
- Changes in time
- FORWARD-AND-BACK MOVEMENT
- INTERCOMPARISON BETWEEN VERSIONS (either moving forward or back)

OWNERSHIP
- Version
- Document: Nameplex & History
- Ownership of Content Elements (separate)

subparagraph
subsub
subsubsub
-----end-----

Now fix the time.

Theodor Holm Nelson *Founder of Interactive Media* *Founder of Network Publishing*

e-mail: ted@xanadu.net

Theodor Holm Nelson
Founder of Interactive Media | Founder of Network Publishing

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①CONNECTION STANDARD
②CHANGE STANDARD
③OWNERSHIP STANDARD
④RE-USE STANDARD
⑤MICROPAYMENT AND MICRODELIVERY STANDARD
⑥STRUCTURE MAPS

HO d2 ----------

IMPLEMENTABLE IMPLEMENTABLE

MICRODELIVERY STANDARD

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para. templates

1. CONNECTION STANDARD
2. CHANGE STANDARD
3. OWNERSHIP STANDARD
4. RE-USE STANDARD
5. MICROPAYMENT AND MICRODELIVERY STANDARD
6. STRUCTURE MAPS

HO d2

IMPLEMENTABLE IMPLEMENTABLE

MICRODELIVERY STANDARD